

LONG ISLAND BOTANICAL SOCIETY NEWSLETTER

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The Rare Plants of New York's Maritime Grasslands

One hundred years ago, if you were standing on any of the Montauk hills, you could have seen ships far out to sea in any direction. There were huge pastures with cattle and sheep. Small pockets of shrubland and forest were found only to the lee of some hills and along the sumpy borders of the largest ponds. The Indians were only recently gone. Fires set by farmers, the incessant wind laden with salt spray, and the grazing animals combined to shape a landscape very different from what we know today.

Norman Taylor, who worked at the Brooklyn Botanic Garden, left us this impression of the vegetation of the Montauk Peninsula in 1923. He marveled at how distinctive Montauk was in relation to the remainder of New York. He described in detail the plant communities of Montauk with lists of plants and their relative abundance. Grasslands or "the downs" were the prominent feature of these uplands. There were several Montauk species found nowhere else in New York.

Biologists from the Natural Heritage Program

Highlights

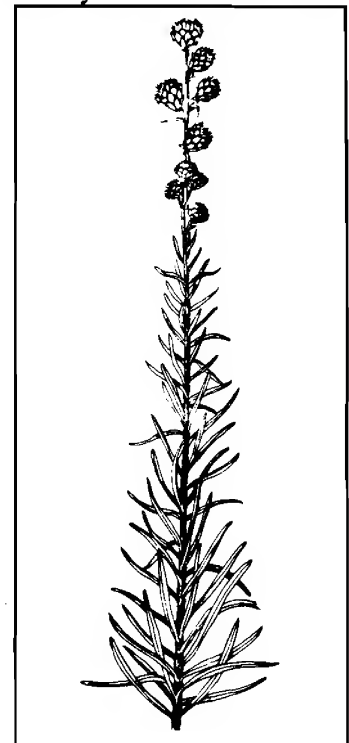
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have studied Taylor and other early scientists who worked along the coast to develop a picture of the changing coastal landscape. Five grassland remnants totaling less than 100 acres have been documented recently on the Montauk Peninsula. Two other maritime grasslands occurrences, both on the South Fork at Shinnecock and Conscience Point, have also been identified in New York. Remnant maritime grasslands also occur on Block Island in Rhode Island and on Cape Cod and the offshore islands in Massachusetts. These grasslands are among the most threatened natural communities in the East.

Despite their small size, maritime grasslands in New York still support some of the rarest plants in New York. Thirteen species tracked by the Natural Heritage Program as rare in New York have been documented in the past fifteen years from South Fork maritime grasslands.

The rarest of these plants is Sandplain Gerardia (*Agalinis acuta*) which is New York's only federally-listed endangered plant. Two of in New York's six populations of Sandplain Gerardia are found in the Montauk Peninsula grassland remnants; both populations are extremely small and vulnerable to extirpation. Taylor described Sandplain Gerardia as one of the eight most common plants of the downs.

Perhaps the signature



New England Blazing Star
a rare plant in New York
with showy purple flowers

species for the maritime grassland community is the Bushy Rockrose (*Helianthemum dumosum*), whose entire global distribution extends from the Hempstead Plains in western Long Island to the far eastern hills of Cape Cod in Massachusetts. It has been considered for federal listing because of its restricted range and limited available habitat. Known from five of the seven grassland occurrences on the South Fork, Bushy Rockrose requires full sun and favors the mineral soils exposed after fires. Populations of Bushy Rockrose expanded following the 1986 fire at Hither Hills and at recent controlled burn sites at Prospect Hill.

Two other grassland species have also been considered for federal listing: New England Blazing Star (*Liatris borealis*) and Nantucket Shadebush (*Amelanchier nantucketensis*). New England Blazing Star is known from two maritime grassland sites; it too responds well to fire. It is also known from other grasslands on Long Island. Nantucket Shadebush is restricted to the South Fork of Long Island and coastal Massachusetts and occurs as a very low shrub within the grasslands and in thickets along the grassland borders. A part of the taxonomic confusion of the Rose Family, Nantucket Shadebush has not been listed as endangered because it may be a distinctive hybrid.

Three other notable rare species found in maritime grasslands are Eastern Silvery Aster (*Aster concolor*), Dwarf Plantain (*Plantago pusilla*), and Midland Sedge (*Carex mesochorea*). Eastern Silvery Aster was known from more than 30 sites in New York in the early part of this century. Recent field searches have confirmed its presence at only one site in the state, a maritime grassland on the South Fork. It may have been previously associated with agricultural practices with impacts that are no longer maintaining distinctive species. Dwarf Plantain is known in New York from three weedy sites and one maritime grassland on a bluff overlooking the sea. This site is similar to others for the species in Southern New England and may be the only natural site for this plant in the state. Midland Sedge was thought to have been extirpated from New York before surveys in the 1980's located it at Montauk and the Hempstead Plains.

Other New York State rare plants found in

maritime grasslands include Little-leafed Tick Trefoil (*Desmodium ciliare*), Fringed Boneset (*Eupatorium hyssopifolium* var. *laciniatum*), Pine Barrens Gerardia (*Agalinis virgata*), Grassleaf Ladies'-tresses (*Spiranthes vernalis*), Sandplain Wildflax (*Linum intercursum*), and Emmon's Sedge (*Carex emmonsii*).

During the past ten years, there have been significant efforts to protect remnant grassland sites in New York. Suffolk County, New York State Parks and Historic Preservation, and East Hampton Township have combined to purchase the remaining grasslands at Ram Level in Hither Hills. The Nature Conservancy has expanded the Montauk Mountain Preserve and purchased the remaining open areas at Shinnecock Hills. TNC has also initiated a fire management program in cooperation with Suffolk County Parks. Active management of these grassland communities is being considered at most sites. Hopefully, populations of some of these rare species can be expanded with effective management. Further, as management pushes back shrubs encroaching into grasslands, some species thought to have been lost from our maritime grasslands may reappear from small unnoticed populations or from long dormant seedbanks.

Robert E. Zaremba, The Nature Conservancy

A Sedge

There are some plants
So obscure to most of us
That only botanists
Latinize their names.
They grow in places
Where we don't notice them.
Some are so rare
They speak louder
Than all assembled environmentalists.
That's the advantage
Of being just...
A sedge.

Thomas Allen Stock, Smithtown

The Shinnecock Hills:

From Drifting Dunes To Pine Forest In 160 Years

The change from one type of plant community to another, after a site has been newly exposed for colonization, is called plant succession. From historical accounts such a sequence can be followed for the Shinnecock Hills, currently the site of a maritime grassland remnant on Long Island's South Fork.

The Shinnecock Hills (named for the Indian tribe that inhabits the area) are a stretch of the Ronkonkoma moraine about 4 miles long and less than 1 mile wide extending east from the Shinnecock Canal toward the village of Southampton. From Shinnecock Bay on the south they rise abruptly to an elevation of 50 feet, form a rolling surface between the 50 and 150 foot contours in the center, and descend more gradually to Great Peconic Bay on the north. Their highest "peak" is 141 feet at Sugarloaf Hill in the south-central part.

Writing in 1822, Timothy Dwight in a journal of his travels in New England and New York had this to say about the Hills: "From Southampton to Canoe Place (the present Shinnecock Canal) the country is a succession of disagreeable sand hills, a considerable part of which are blown, like the grounds formerly mentioned in the description of Cape Cod, and exhibit a desolate and melancholy aspect. These Hills were once cultivated, but from the poverty of the soil and the ravages of the wind

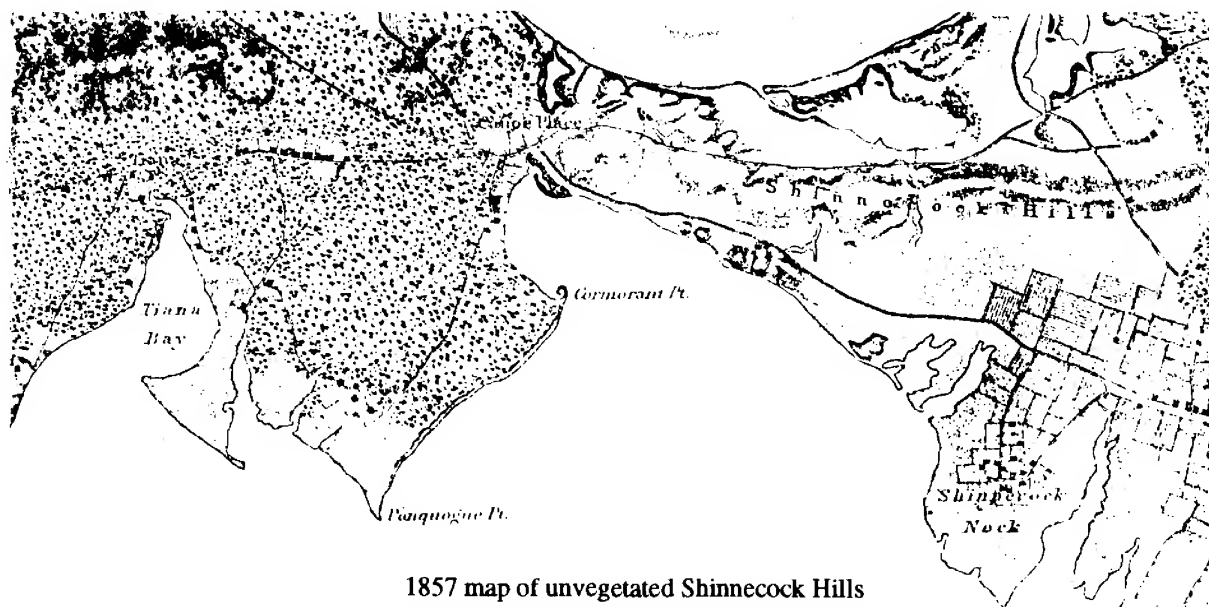
appear to have been finally forsaken." ("Disagreeable" from the point of view of pulling a cart or wagon across them on the unpaved roads of his day.)

During most of the remainder of the 1800's Long Island historians (Prime, 1845; Thompson, 1849; Bayles, 1874) portray a scene of drifting sand in hills up to 100 feet high, covered only by widely scattered patches of Beach Heather (*Hudsonia tomentosa*) and low shrubs such as Black Huckleberry (*Gaylussacia baccata*) and Bayberry (*Myrica pensylvanica*).

By 1885, more than 60 years after Dwight's account, stabilization appears to have made some progress, since Bayles mentioned grass and low shrubs covering enough of the valleys to permit grazing, although he also reported sand hills still covering the whole breadth of the "peninsula." In 1896 Flint wrote that the Hills had "assumed some permanence of form" held together by coarse wiry grass, low shrubs, and dwarf red cedars. Here we have the first mention of trees. The wiry grass was probably the Wavy Hairgrass (*Deschampsia flexuosa*) or the grass like sedge (*Carex pensylvanica*) which grow on the Hills today.

In the Fall of 1897 and again in the Spring of 1899 the Shinnecock Hills were visited by a botanist, Willard N. Clute, who provided a more complete description of the vegetation and a listing of the plant species. The following excerpt is from his 1897 publication:

"I doubt if there is any other place within a hundred miles of New York City where so much of the desolate is crowded into the landscape. On every



1857 map of unvegetated Shinnecock Hills
(from 1857 Coastal & Geodetic Survey)

side, as far as the eye can reach, the yellowish-white sand stretches away in a sterile, uncultivated, sun-burned, wind-swept, treeless waste. The surface is a succession of swells and hollows - like that of its neighbor the sea - and the larger eminences could suggest hills only to the most vivid imagination.

The first thing to attract the notice of a visitor from a more fertile region is the fact that the vegetation is so scanty that the soil actually shows through it; often there are considerable areas in which absolutely nothing grows. Much, however, that at a distance appears bare and gray, is found upon closer inspection to be covered with lichens - the reindeer-moss (*Cladonia*) is sole tenant of the soil, other plants have their special domain also. It is remarkable how the various plants tend to grow in masses of one kind, as if Nature was here trying her hand at gardening and had assembled each species into a bed of its own."

Clute collected 97 species from this heath-like vegetation dominated by Beach Heather, Sick-leaved Goldenaster (*Chrysopsis falcata*), with a few large patches of Bearberry (*Arctostaphylos uva-ursi*). Less numerous were the Dwarf (probably Winged) Sumac (*Rhus copallina*), Beach Plum (*Prunus maritima*), Heath Aster, (*Aster ericoides*), Running Blackberry (*Rubus hispidus*), Goldenrods (*Solidago* spp.), and the Prickly-pear Cactus (*Opuntia humifusa*). In his spring visit, Clute noted Bird's-foot Violet (*Viola pedata*) and a large flowered Rockrose, probably *Helianthemum dumosum*, now rare in New York State.

Twenty years later (1917) the Southampton town historian, J. T. Adams, wrote that the Shinnecock Hills were well vegetated (the large bare areas noted by Clute had filled in) and even had groves of Red Cedar and Black Oak in the western part. Afforestation (establishment of forest cover) had progressed enough during the next 10 years for the East Hampton town historian, H. D. Sleight, to venture a prediction in 1927 that the Shinnecock Hills would some day become forested, as had the Napeague Dunes which were also once moving sand.

Sleight's prediction proved accurate. Thirty years later a U.S. geological survey topographic quadrangle (Southampton, 1956, 7.5') maps forest over the western third of the Hills. The dominant tree was (and is) Pitch Pine (*Pinus rigida*), not

mentioned formerly as growing in the area. Since 1956 afforestation by Pitch Pine has progressed rapidly eastward and a 1976 aerial photograph shows only the westernmost third of the Hills (Southampton College and the Shinnecock Golf Club) still in the grassy "downs" stage, dominated by Beardgrass (*Schizachyrium scoparium*) and patches of low shrubs.

In summary, plant succession on the Shinnecock Hills has proceeded from bare sand to grassy heath in 75 years (1822-1897), and from grassy heath to pitch pine forest in 86 years (1897-1983). The question now is, assuming no further disturbance, will the Hills remain in pine forest; or will this in turn be superceded by oaks as the pines shade out their own seedlings and oak seedlings grow into the canopy to replace them? Only time (say about a century or so) will tell.

Ann F. Johnson

Florida Natural Areas Inventory
(formerly from Southampton, Long Island)

Spring in the Shinnecock Hills

by Willard N. Clute

(This article first appeared in 1899,
published in "The Plant World,"
a monthly journal of popular botany.)

There has already appeared in these pages an account of a trip to the sand barrens of Long Island in mid-summer. The remembrance of the striking contrasts which its flora presented, in comparison with more favored localities, inclined us to visit the region again in spring, and accordingly a trip was planned covering late May and early June. The locality selected was that part of the barrens known as the Shinnecock Hills. It is situated on a narrow strip of land between Shinnecock and Great Peconic Bays, and about thirty miles west of Montauk Point. The country here is little better than a desert. It consists essentially of immense sand-dunes over which the wind has free play and upon which the sun beats with undiminished force. On lowery days, the

wind drives the spray from the sea up across the rolling surface in gray sheets that shut one in and limit his vision to less than a mile, and on foggy mornings the mists lie late in the hollows, but the thirsty ground quickly sucks up the moisture. In half a day after a rain, the earth is dry enough to sit upon.

In spite of all these adverse conditions, a considerable number of plants manage to exist in the sterile soil. Foremost of them must be placed the Reindeer Moss (*Cladonia*). When the sun shines, its existence seems to stand still. It crunches under the foot like crusted snow. But a day of moist air revives it, and it becomes soft, pliant and full of life. With the *Cladonia* in the sandiest spots may also be found the stolid Prickly Pear (*Opuntia*). Summer's heat and winter's cold seem alike to it, and it always is something of a surprise when at the height of the season it unbends enough to put forth its magnificent golden blossoms. In some way, such splendor does not seem in keeping with this dull plant.

It is generally supposed that spring comes later to the sand-barrens than to inland regions, or rather that the sand-barrens do not know much of the vernal flora. This, however, is a mistake. The flowers bloom here as early as they do in the same latitude inland, and while the species may not be so numerous, the lack is abundantly made up by the multitude of individuals. Plants in bloom are very noticeable. This is due principally to the fact that when the soil is right for the growth of a species, that species usually occurs in quantity, and the absence of other vegetation allows the flowers to show to the best advantage. For this same reason, masses of color are the rule. To find areas spangled with the blossoms of several species is quite exceptional.

In late May the Lupine season was at its height, and the Bird's-foot Violets were striving to escape eclipse. Since each kept to its particular area, the task was not as difficult as it might have been. Yellow, however, is the favorite color of the barrens. Of the species which gave color characteristics to the landscape, ten were yellow, four were white and four blue. The Rock-rose (*Helianthemum*) - a long way from its rocks - was easily the leader. In the dry places its yellow-blossoms much larger than inland - fairly glowed with color. Everywhere, the gray firmament of *Cladonia* was sprinkled with these tiny suns. For once the Dandelion found itself displaced.

There Potentillas and the bulbous Buttercup were found in better soil, and in the thin grass along roadsides the Star-grass was plentiful. The *Hudsonia* has a characteristic color of its own at any season, but in early June a golden glow comes upon it from the multitude of its tiny blossoms.

Of white flowers, the Beach Plum was most noticeable. At some distance the low thickets looked like banks of white mist. The Choke-berry (*Aronia*) - more common but less noticeable - silvered the barrens in many places. Besides Lupines and Bird's-foot Violets, the Blue-eyed Grass and the blue *Linaria* were conspicuous. The latter likes to grow on the sandy ridges along the sprawling cross-country roads, but never becoming as tiresome to the eye as its coarse yellow relative, the Toad-flax. It may be doubted whether one can see the Blue-eyed Grass at its best, except in the barrens. Nowhere else have I seen the flowers in such profusion. Here and there the roadside seems invested with a blue haze from their numbers. Taken singly the blossoms seem out of place on the grass-like scape, and one may imagine them to be flowers from some other plant that have climbed up the grass-blades, to have a better look at the world.

In the sand-barrens much of the more noticeable color is not produced by flowers. I have referred to the *Hudsonia* and *Cladonia*, but the dark, shining green of the Bear-berry (*Arctostaphylos*) and the silvery gray of the Mouse-ear Plantain (*Antennaria*) are equally prominent. Scarcely less so were the Huckleberry (*Gaylussacia*) and the early Blue-berry (*Vaccinium*), both forming separate thickets, the former tinged with red, the latter purplish.

Upon a close investigation of the flora, one is impressed by the great number of heathworts its contains. Within a radius of half a mile we counted fifteen species, including *Kalmia latifolia* and the Indian Pipe (*Monotropa*). Most abundant, of course, were the various species of *Vaccinium*; most interesting was the Arbutus (*Epigaea*), which here almost covered some of the open places, in full sun. The Wintergreen (*Gaultheria*), was also plentiful with the Arbutus, and both seemed decidedly out of place, since they usually occur in woods or at least in thickets.

In the course of a week's collecting, ninety-seven species were found in bloom, which appears to be a fairly good showing for a region within which the conditions, at first glance, seem so forbidding.

A Clarification on "Iceland Moss" on Long Island, New York

I just finished reading the July-August 1996 issue of the Long Island Botanical Society NEWSLETTER, and as usual found much of interest in it. I feel it is important to note, however, that the "Iceland Moss (*Cetraria islandica*)" mentioned on page 30, found by Bob Laskowski and Chris Mangels near Sayville, is actually *Cetraria arenaria*, a recently described species that has long been confused with true *C. islandica*, a lichen of the North.

Cetraria arenaria was described in 1977 by Ingvar Karnefelt of Sweden. He looked at Latham's material (as have I), and I also saw a snip collected by Bob Laskowski. *Cetraria arenaria* occurs on sand along the Atlantic coastal plain from Maine to Virginia, around the Great Lakes, and on the northern prairies; also as a relict inland on exposed mountain crags with a limy substrate.

It is not common, and thus always a joy to see outdoors. Karnefelt noted, in his 1979 monograph on the "Brown Fruicose Species of *Cetraria*" (OPERA BOTANICA 46): "Accelerated human activity within the distribution range will probably make this species very rare in the near future" (p. 66).

Bob and Chris's record from Sayville is important. This lichen used to occur in the remnants of the Hempstead Plains, but has not been found there for about twenty years.

Robert Dirig, Cornell University



Cetraria arenaria (a broad-lobed specimen);
from Karnefelt (1977)

Plant Sightings

The relatively cool and moist summer of 1996 will be remembered by many field naturalists as the summer of mushrooms. Bizarre shapes spewed forth from forest floors, adorned in colors of purple, orange, yellow and red, as jelly and coral fungi, stinkhorns and even slime molds invaded Long Island. **Lance Biechele** and **Sam Ristich** would be in their glory if they had presented their mushroom workshop this summer instead of during last summer's drought.

Elsa L'Hommedieu reported a vast population of Starwort (*Callitriche terrestris*) from the damp footpaths at her home in Nissequogue. Most members of the Water Starwort Family are aquatics, only one species in the Northeast is terrestrial; currently fewer than five populations of this rare species are known from New York. Also occurring on Elsa's property is the Ragged Fringed Orchid (*Platanthera lacera*) and the Weed Orchid (*Epipactis helleborine*).

New York's only non-native orchid continues to pop up everywhere. **Steve Biasetti** reported the first occurrence of *Epipactis helleborine* from the Township of Southampton, where he observed 22 individuals along a path in the woods just southeast of Long Pond off Widow Gavitts Road.

Eric Lamont collected a rare, non-native member of the Snapdragon Family from the sandy shoreline of Belmont Lake; apparently, this is the first Long Island collection of *Mazus pumilus*, introduced from eastern Asia.

Dyer's Rocket (*Reseda luteola*) was collected by **Skip Blanchard** from the Sayville Grasslands. A member of the small Mignonette Family, this Mediterranean species was formerly cultivated for its yellow dye. The Green Adder's Mouth Orchid (*Malaxis unifolia*) was also reported from the Sayville Grasslands by **Bob Zaremba**; this inconspicuous orchid may be more common on Long Island than the two currently known populations suggest.

Dwarf Huckleberry (*Gaylussacia dumosa*), recently added to the New York Rare Plant List (Young, 1996), has been historically documented from Long Island and Staten Island; it is currently unknown elsewhere in the State. **Gary Lawton**

added yet another species to the healthy list of rare plants occurring at Connectquot River State Park, by observing several subpopulations of Dwarf Huckleberry in moist sands bordering unpaved roads through pitch pine-oak forest.

Society News

Volunteers sought for Seabeach Amaranth survey

Seabeach Amaranth (*Amaranthus pumilus*) is an annual plant native to the barrier island beaches of the Atlantic coast. Historically, it occurred in nine States from Massachusetts to South Carolina; the species has now been completely eliminated from six of the States in its original range.

The Nature Conservancy will be coordinating the 1996 Long Island survey during the week of September 23rd, and is seeking volunteers to help walk the beaches. If interested, please call **Cathy Brittingham** at 516/367-3225.

New Publication: Atlas of Long Island Orchids

The Torrey Botanical Club has published "Atlas of the orchids of Long Island, New York," by Eric Lamont. A dot distribution map of each of Long Island's 37 orchid species is presented, based exclusively on over 1200 voucher specimens collected from 1841 to 1994. Citations of examined specimens are presented and indicate the most recent collection from each locality, along with additional information. References to historical Long Island orchid publications are also presented.

Complimentary copies of the publication are available upon request from **Eric Lamont**, Biology Department, Riverhead High School, Riverhead, N.Y., 11901.

Roadside Mowing: Good News - Bad News

For the first time in seven years, East Hampton roadsides supporting populations of rare orchids

have not been mowed. The roadsides in question had been previously posted with wildflower signs, compliments of the East Hampton Garden Club. Unfortunately, wildflower signs were removed along the roadside supporting the Orange Fringed Orchid (*Platanthera ciliaris*), and the population was once again decimated during peak flowering time.

Pine Barrens Conference

Friday, 4 October 1996, 8:30 am to 4:30 pm, at the Brookhaven National Laboratory's Berkner Hall, Upton, NY. The forum will be comprised of short, 20 minute presentations on completed or ongoing research pertaining to Long Island's pine barrens. There is no fee, but interested persons are requested to register (by September 15th) with the L.I. Groundwater Research Institute of SUNY at Stony Brook, c/o Dr. Henry Bokuniewicz, at 632-9780 or 632-8674, or by fax at 632-8820.

New Members

The Long Island Botanical Society is pleased to welcome the following new members:

Bev Benedict & Dion Durnford, Wading River; **Jean Brennan**, Hicksville; **Catherine Johnson**, Northport; **Walter Meierhof**, East Meadow; **Carol & Joseph Pelliccia**, Wantagh; **Doug Winkler**, Jericho.

Field Trips

21 Sept. 1996 (Saturday), 10am, Floyd Bennett Field, Brooklyn. Joint trip with the Torrey Botanical Club. **DIRECTIONS:** Belt Pkwy to Exit 11S, Flatbush Ave south. At traffic light near Marine Pkwy Bridge, turn left into park. Meet at Visitor Contact Station. Bring lunch, prepare for wet walking. Leader: **Patrick Cooney** (914/478-1803).

28 Sept. 1996 (Saturday), 10:30am, Shawangunk Mtns.: dwarf pine ridges, ice caves, Sam's Point scenic views. This trip is sponsored by the N.Y. Flora Association. Meet at Cragmoor, SE of Ellenville, Ulster Co., N.Y. For specific information call **Bob Zaremba** at 518/463-6133 x226(w) or 518/274-7419(h).

LONG ISLAND BOTANICAL SOCIETY

Founded: 1986; Incorporated: 1989.

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

President	Eric Lamont
Vice President	Skip Blanchard
Treasurer	Carol Johnston
Rec'd Sec'y	Barbara Conolly
Cor'sp Sec'y	Jane Blanchard
Local Flora	Steven Clemants
Field Trip	Glenn Richard
	Allan Lindberg
Membership	Lois Lindberg
Conservation	John Turner
	Louise Harrison
Education	Mary Laura Lamont
	Thomas Allen Stock
Hospitality	Betty Lotowycz
Program	Skip Blanchard
	Steven Clemants
Editor	Eric Lamont

Membership

Membership is open to all, and we welcome new members.

Annual dues are \$10. For membership, make your check payable to LONG ISLAND BOTANICAL SOCIETY and mail to: Lois Lindberg, Membership Chairperson, 45 Sandy Hill Road, Oyster Bay, NY 11771-3111

PROGRAMS

10 September 1996 - 7:30 pm*

Skip & Jane Blanchard, "Travels in Kenya"

Slides of places, animals, plants and people from trips in 1990 and 1996 to upland Kenya.

Museum of L.I. Natural Sciences, Room 137,
SUNY at Stony Brook.

8 October 1996 - 7:30 pm*

**Dave Kuenstler, Wildlife Manager, Van
Cortlandt and Pelham Bay Parks, Parks Admin-
istration, N.Y.C. Dept. of Parks & Recreation,
"Rarities of Van Cortlandt and
Pelham Bay Parks"**

A talk with slides on rare plants and natural communities of the Bronx and their protection and management. Muttontown Preserve Nature Center, East Norwich.

*Refreshments & informal talk begin at 7:30pm, the meeting starts at 8pm. For directions to: 1) MOLINS, call 516/632-8230; 2) Muttontown Preserve call 516-571-8500.

LONG ISLAND BOTANICAL SOCIETY
c/o Muttontown Preserve
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East Norwich, New York 11754